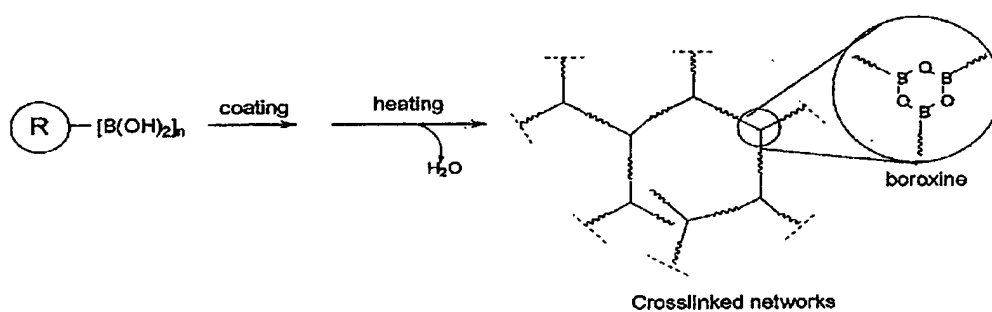
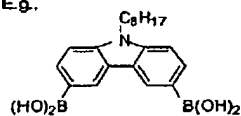


1/21

 $n = \text{or} > 1;$ $R = \text{organic or organometallic complex moiety including oligomer and polymer.}$

E.g.



(CzBA)

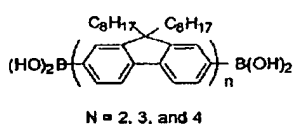
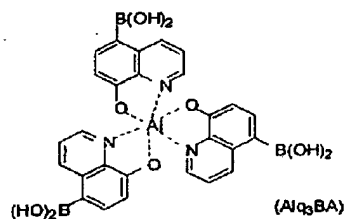
 (F_nBA)  (Alq_3BA)

Fig. 1

2/21

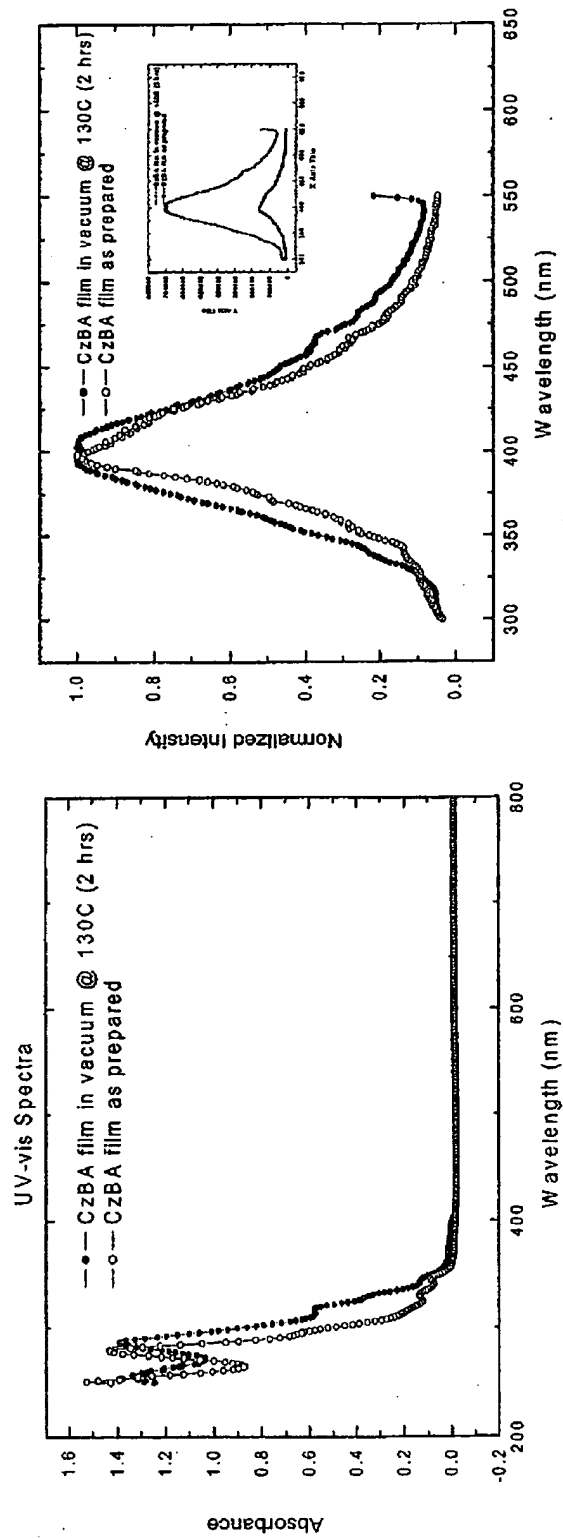


Fig. 2

3/21

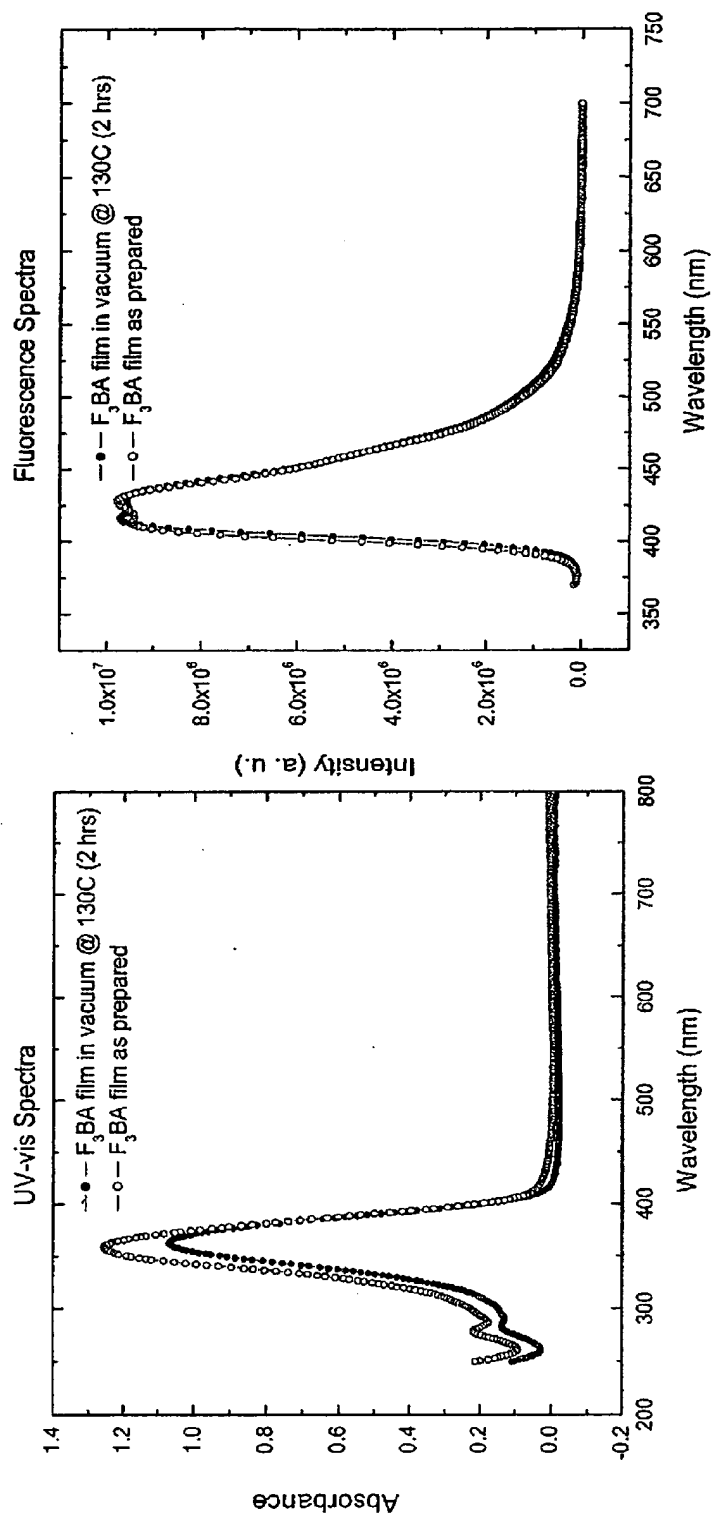


Fig. 3

4/21

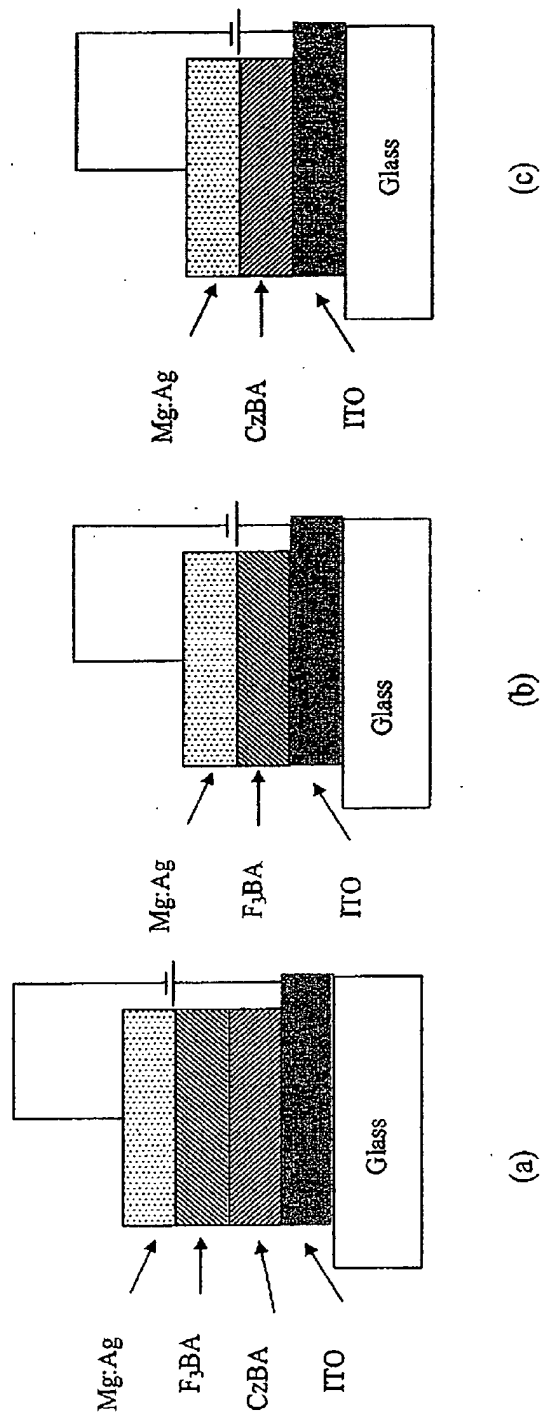


Fig. 4

5/21

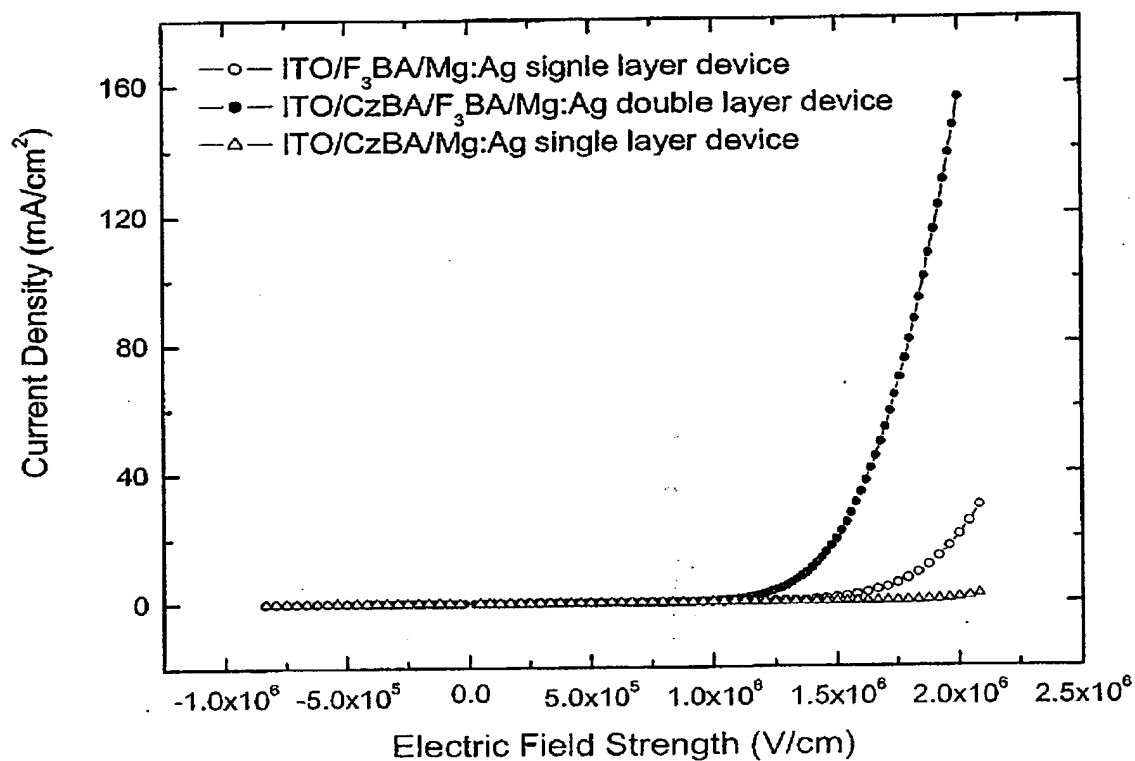


Fig. 5

6/21

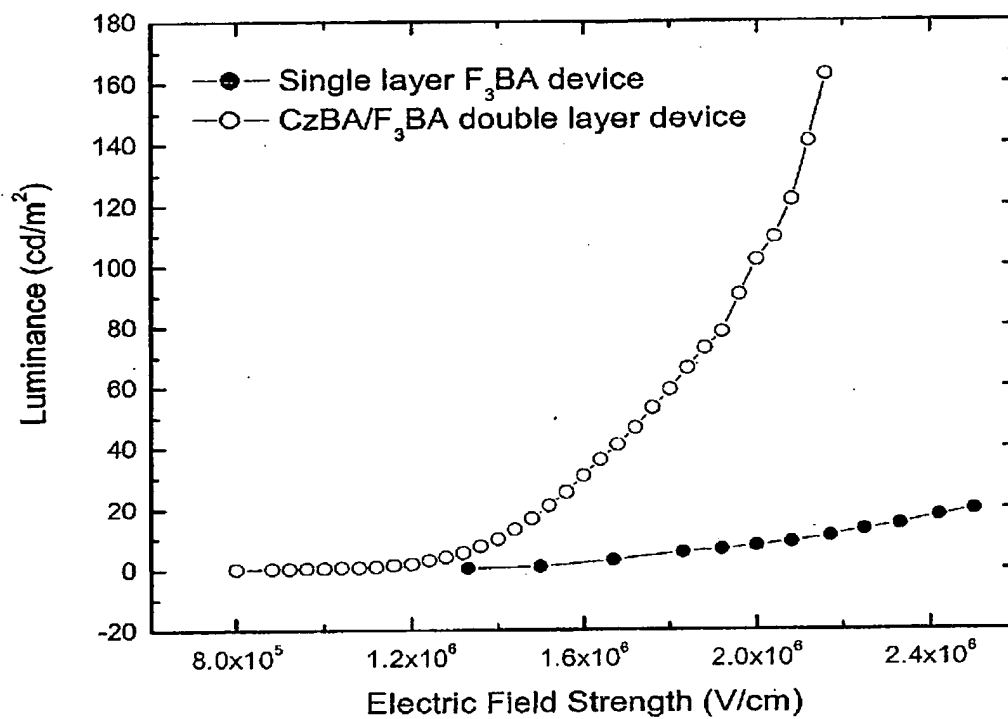


Fig. 6

7/21

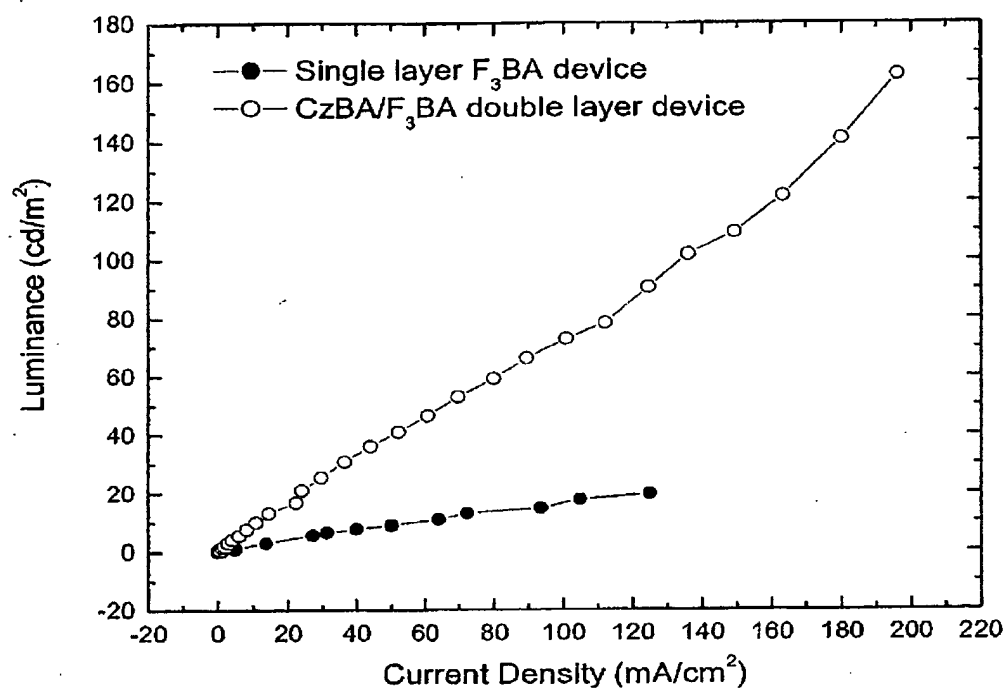


Fig. 7

8/21

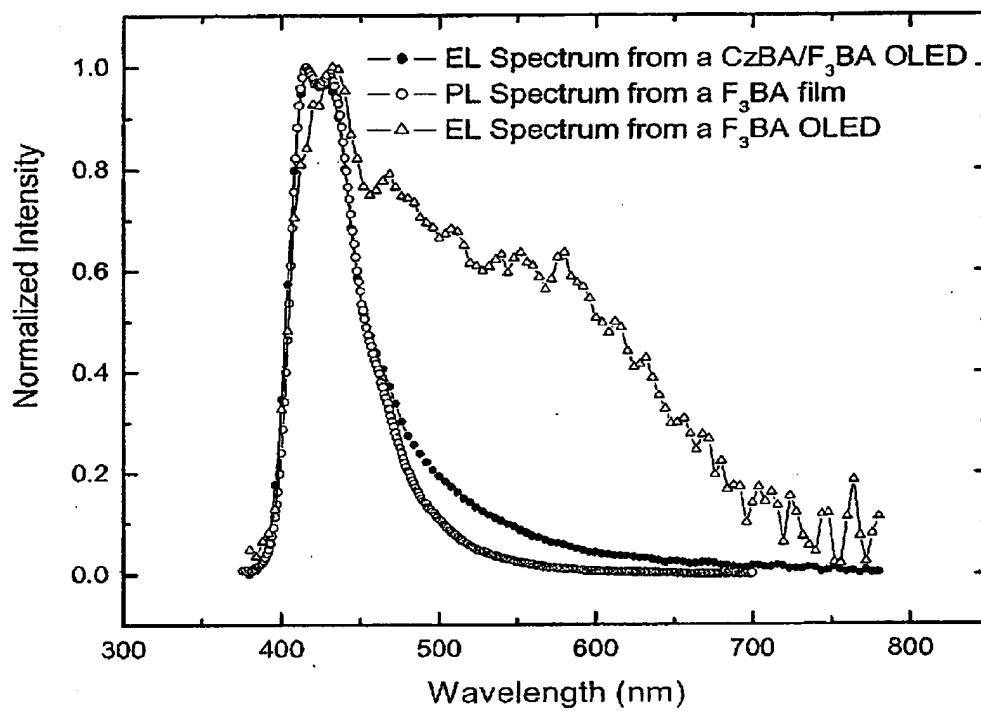


Fig. 8

9/21

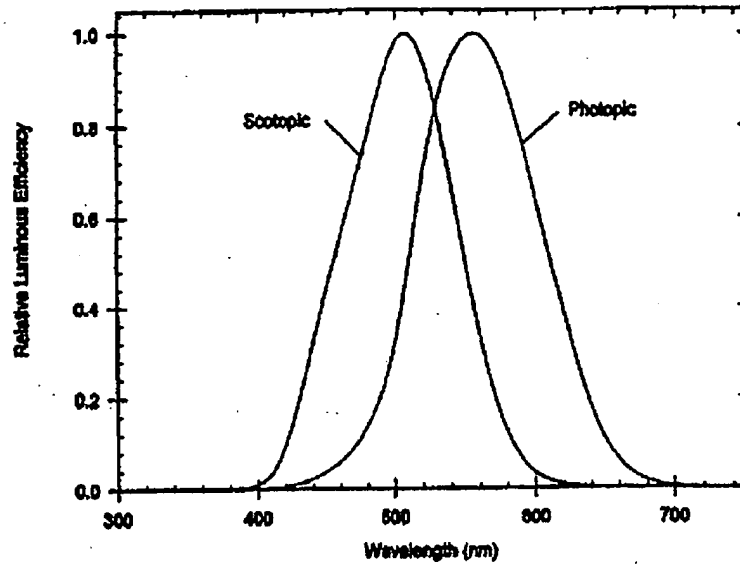
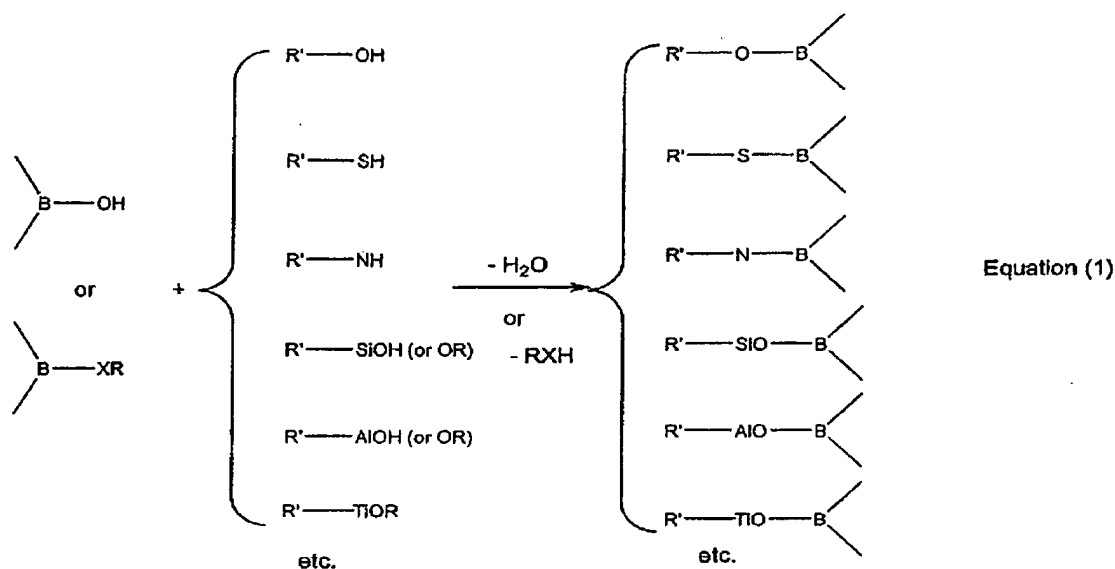
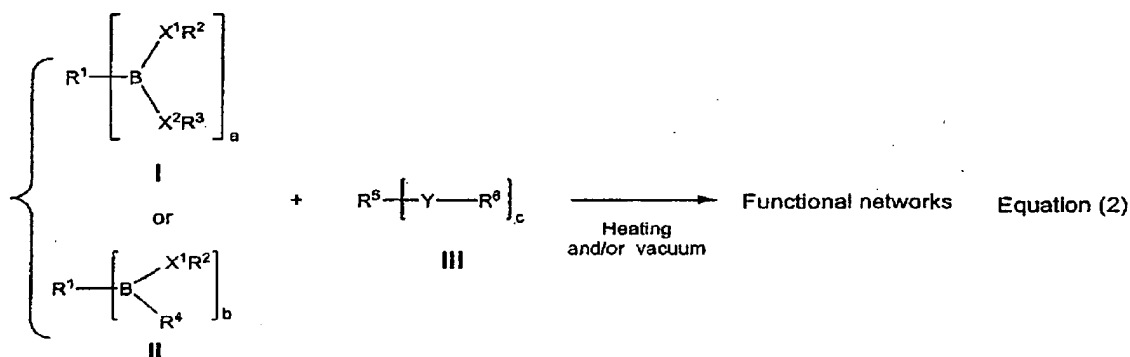


Fig. 9

10/21



wherein, X = O, S, N; R and R' = alkyl, aryl, or any other organic and inorganic structures or groups.



wherein,

R¹, R⁴, and R⁵ = alkyl, aryl, or other groups, either organic or inorganic, but at least one of them contains functionality; they can be of small molecular weights or high molecular weights.

R², R³, R⁶ = H, alkyl, aryl, they may be same or different, but at least one of them is H.

X¹, X² = O, S, or N, they may be same or different.

Y = O, S, N (or NH), SiO, AlO, TiO, etc.

a, b, c are equal to or larger than one, but at least either a (or b) or c is larger than one.

Fig. 10

11/21

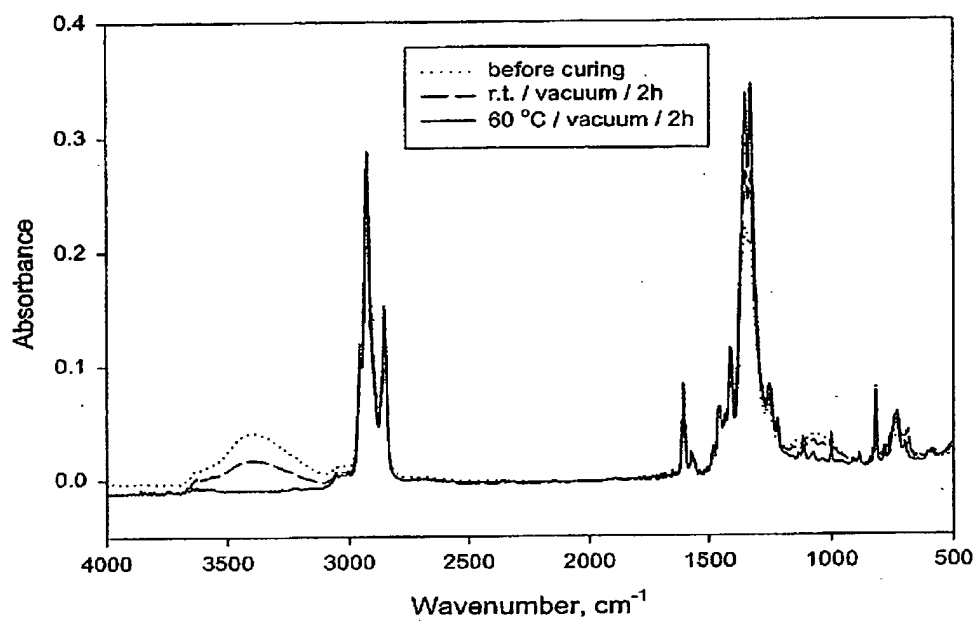


Fig. 11

12/21

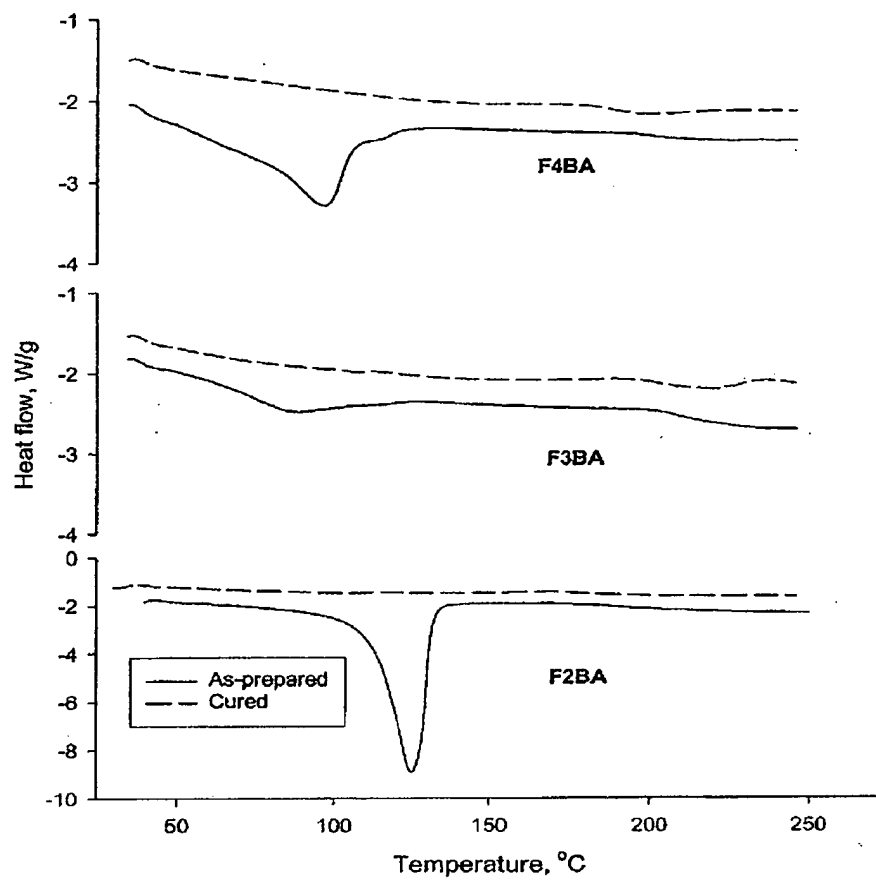


Fig. 12

13/21

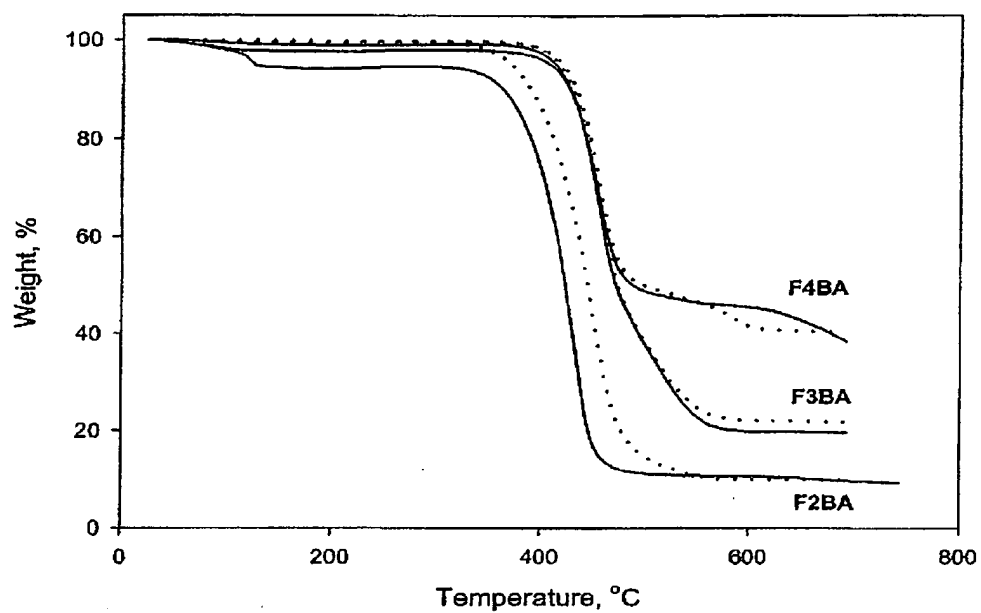


Fig. 13

14/21

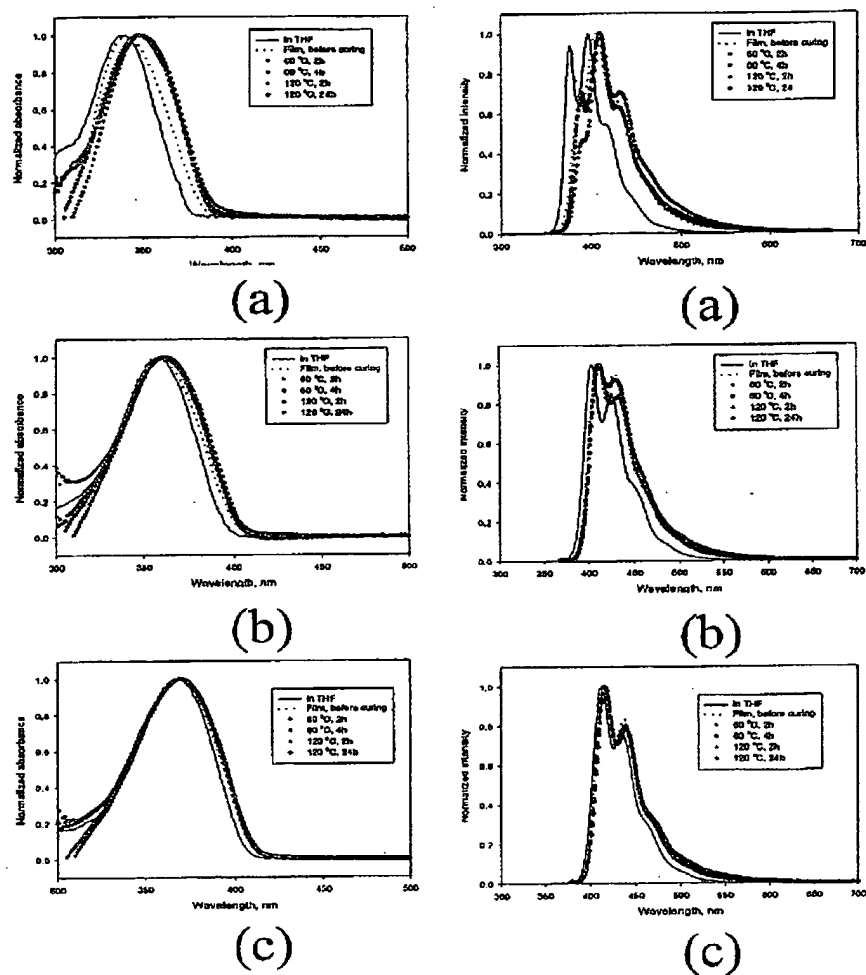


Fig. 14

15/21

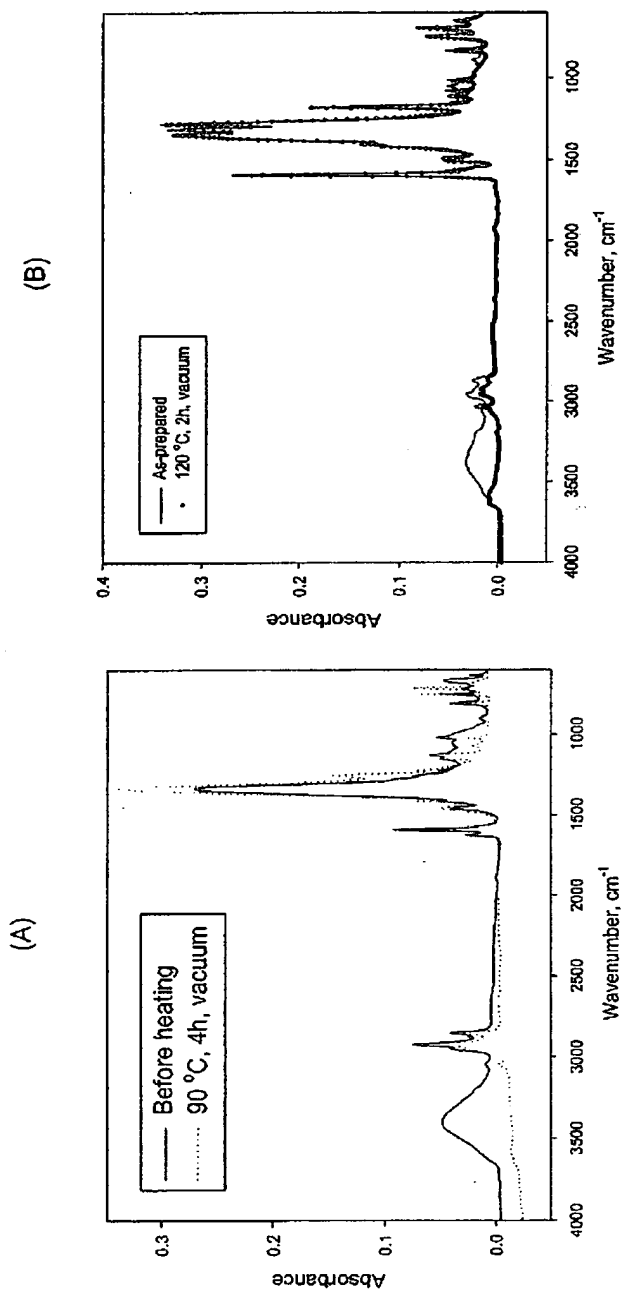


Fig. 15

16/21

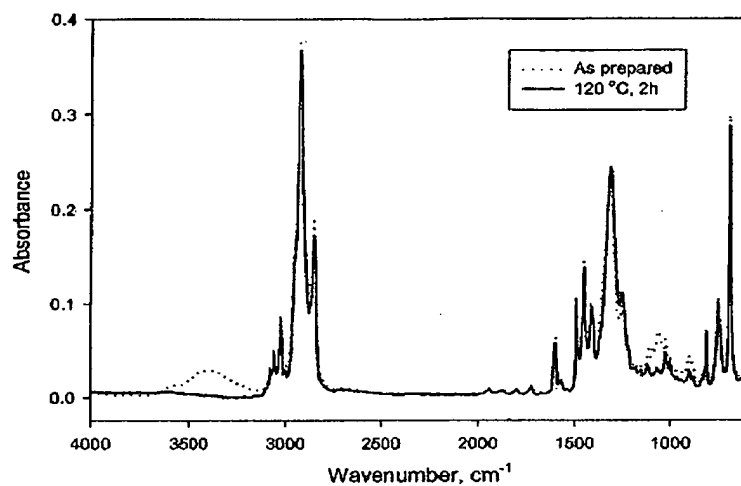


Fig. 16

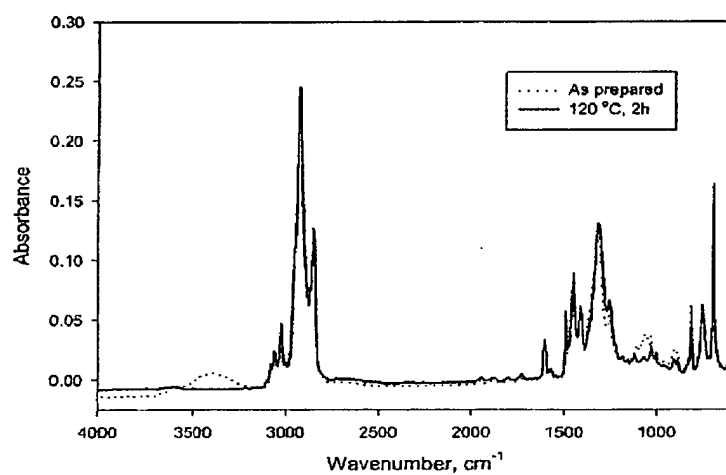


Fig. 17

17/21

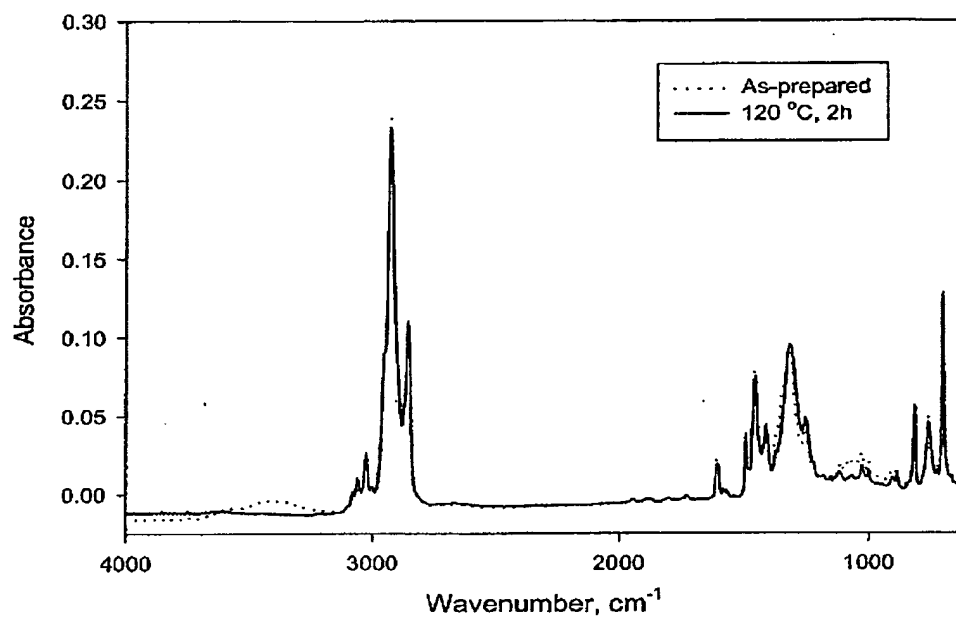


Fig. 18

18/21

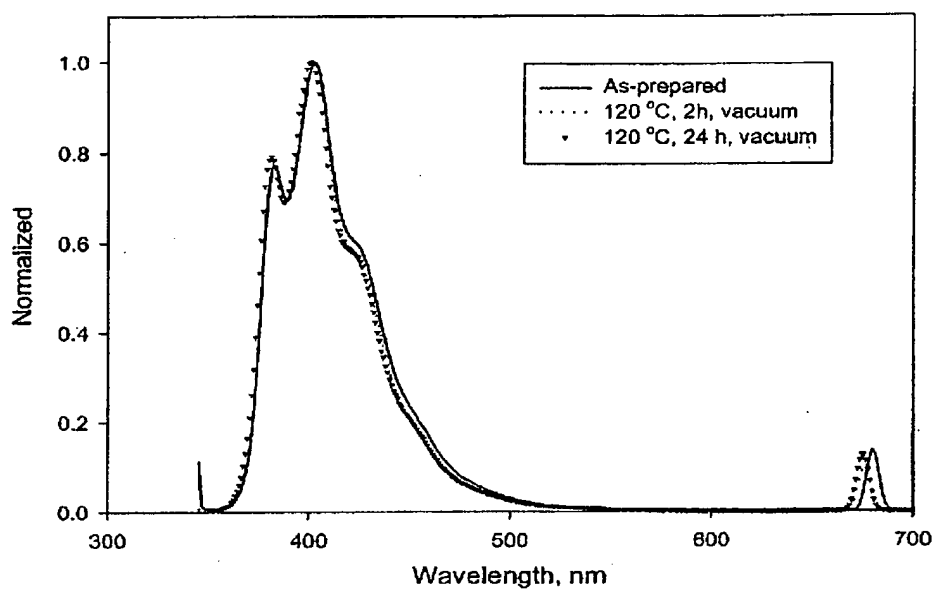


Fig. 19

19/21

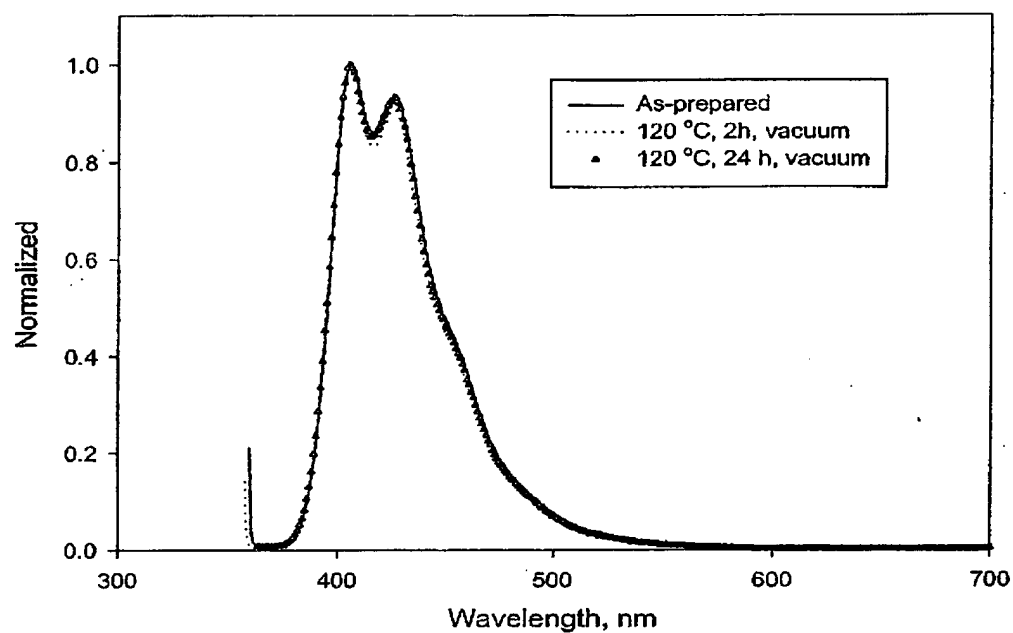


Fig. 20

20/21

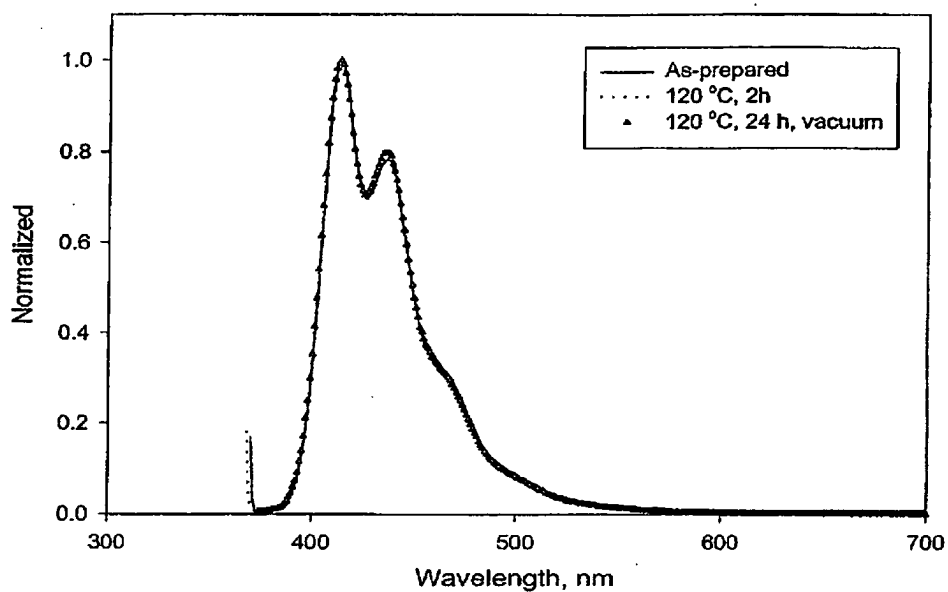


Fig. 21

21/21

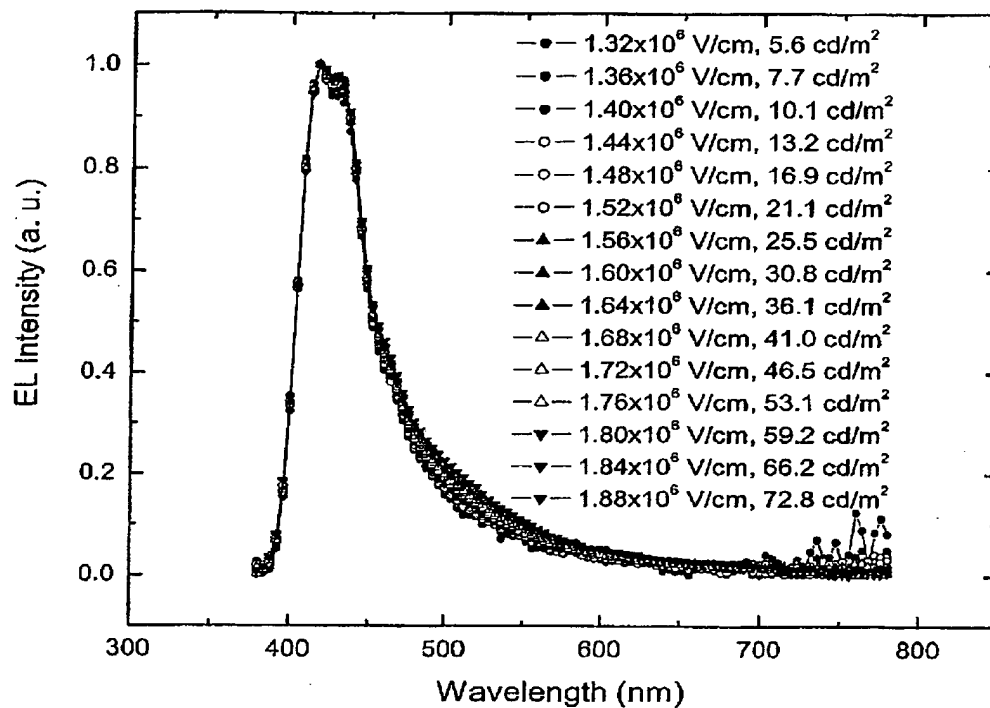


Fig. 22